**Primary and Secondary Productivity in a Community**

Ms. OK. AP Biology, 2014-2015

Gross Primary Productivity (GPP), Net Primary Productivity (NPP), and Secondary Productivity are measured in units of biomass / area / time

(g / m2 / s ) or units of energy / area / time (kcal or joules / m2 / s)

**Biomass or Energy Lost Due to Waste (Feces)**

**Biomass or Energy Lost Due to Cellular Respiration**

(During this process, chemical energy stored in glucose is lost)

**Biomass or Energy That Stays Stored in Primary Consumers**

(This is the energy that’s available for secondary consumers to use when they primary consumers)

Net Primary Productivity – Biomass or Energy Lost During Respiration – Biomass or Energy Lost to Waste (Feces) = **Secondary Productivity**

**Primary Consumers (ex: Rabbits)**

**Biomass or Energy That Stays Stored in Plants**

(This is the energy that’s available for consumers to use when they eat plants)

Gross Primary Productivity – Biomass or Energy Lost During Respiration = **Net Primary Productivity**

**Biomass or Energy Lost Due to Cellular Respiration**

(During this process, chemical energy stored in glucose is used)

**Light Energy**

(Captured by plants during photosynthesis and used to produce sugars, which add to the biomass or dry weight of the plant)

Light Energy Converted to Biomass = **Gross Primary Productivity**

**Producers (ex: plants)**